

Ø BEAT

COLORADO SPRINGS,
COLORADO

SEPTEMBER 1983

Some Help For A Faster Ear . . .

NEED CW TAPES???

Do you need some "variable speed" code practice tapes? If so, or if you just wonder what the high speed CW ops talk about, here's something cheap and easy that should help you.

To begin with, stations operation CW at speeds of 50 words per minute or faster can be found around 7.050 and 14.050 MHz, particularly during the evenings and on weekends. Many of these stations are using computers connected to their equipment to send and receive the code with perfect spacing. If you record these stations with a cassette tape recorder and slow the tapes during playback, you can have some dandy practice tapes, particularly if your receiver is equipped with a decent CW filter.

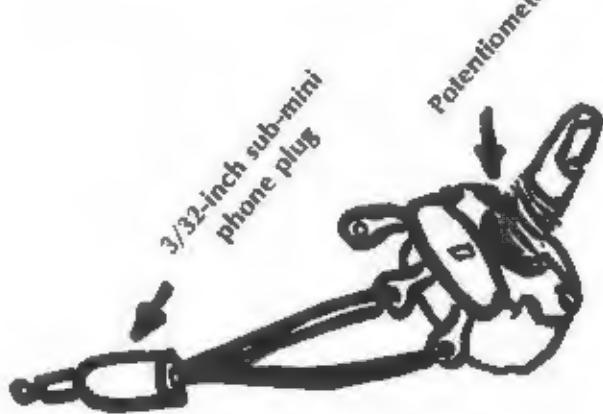
Procedure: (1) Tune the CW station so the pitch of the signal is slightly higher than normal. (2) After recording the station, rewind the tape and plug a potentiometer into the "microphone remote switch" jack. (3) Start the recorder in "play" and vary the potentiometer until the desired code speed is attained.

By using the above procedure, 50 WPM code can easily be adjusted to less than 5 WPM.

The potentiometer should be about 100 ohms linear taper but satisfactory results can be obtained with a 1,000 ohm volume control from a junk radio.

Remember, ... to increase your receiving code speed, the speed should be adjusted faster than is comfortable to copy but not so fast that you become frustrated.

DE WA6UYB (DICK)
TNX CARS Wobbly Oscillator



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ZERO BEAT is published monthly in the interest of the members of the Pikes Peak Radio Amateur Association, Inc., Colorado Springs, Colorado. Permission is given to reprint articles or excerpts provided credit is given. Deadline for submission of articles is the 21st of the month. Classifieds accepted anytime.

The Pikes Peak Radio Amateur Association meets on the second Wednesday of every month at the Palmer House Motel, I-25 and Fillmore, at 7:30 p.m. All amateurs and interested parties are invited to attend.

Editor: Don Lohse KB0KQ, 1410 E. LaSalle, Colorado Springs, CO 80907 635-7469

MEETING MINUTES

The regular meeting of the Pikes Peak Radio Amateur Association was called to order August 10th in the Palmer House at 7:30 p.m. Thirty-five members and guests were present. After introductions, the previous minutes were approved.

Les, KC0NC, reported the treasury balance on July 13th was \$2886.50. The club realized \$169.30 income and \$337.06 in expenses leaving a current balance of \$2718.74.

Mark, NØEPF, presented the new ARRL Special Service Club proposal. For the PPRAA, the change would be only in designation as the club already meets all requirements. The benefits of becoming an SSC were attractive considering the club would have to make no changes in its functions. There were no objections from the membership and the proposal was submitted to Darla Richardson the coordinator from Denver.

Due to depletion of the coffee fund the Board of Directors has asked that members having refreshments at club meetings contribute 25¢ for coffee and 25¢ for doughnuts.

A number of calls have already been received concerning novice classes. Classes are scheduled to begin Sept. 20th. Joe, NØENM; Charlie, KCØTI; and Mark have been registered with the ARRL as instructors. Some changes will need to be made because of the change to the new volunteer examiner program.

Hammy is still missing. Anyone with information as to its whereabouts please contact a board member.

The majority feeling of both membership and board is to keep the Palmer House as the meeting location. Concern is still being expressed over the cost which is presently \$20 per meeting. Also, the club still needs a secure location to install the club station.

Dave, NQDV, announced the Woodland Park Enduro will be held Sept. 18th. Help in the form of a coordinator and volunteers is needed for this all day event.

Don, KBØKQ, announced the Academy Run for the Sun is scheduled Sept. 10th. Hams are needed to work two to three hours in the morning.

The Boulder Swapfest will be held Sept. 25th from 9 a.m. to 3 p.m. at the Boulder Armory. Oak, KØROL, reported on his representation at the

OK, K9KOL, reported on his representation at the Colorado Council of Amateur Radio Club's meeting.

Several "housekeeping" changes in the CCARC constitution were presented to the PPRAA board for approval.

Ray, ~~AA4L~~, updated the status of Oscar 10, explaining the problems and success with the new satellite. Ray also played a tape of signals and QSO's from the satellite.

After break, Charlie and Oak presented a talk and demonstration of Fast-Scan Amateur television. Actual pictures and tape were shown to members. Discussion of equipment needed and procedures for operation were held. Announcement of a repeater for FS-TV was also made.

Dave announced that a new PR chairperson was needed. Volunteers came forward during the break.

The meeting adjourned at 9:56 p.m.

Respectfully Submitted,
Mark NØEPF

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THE MOLECULAR COMPUTER

Imagine your home computer with a "living" brain that has to be refrigerated. Sound far fetched? Well, it may not be in the future.

Visions of many futuristic devices recently brought over 150 researchers to the 2nd International Workshop on Molecular Electronic Devices, held in Washington, D.C.

One of the major topics was the development of the Molecular "Bio-Computer" which would use living protein as memory. Of course such memories already exist. You are using it now to read this newsletter. That's right, it's nature's own design, our brain.

Why do we need such a device? The obvious trend in computers is toward smaller and faster. The 16K memory pack for a Timex Sinclair nearly fits in the palm of your hand, compared to those of fifteen or twenty years ago which were as large as a phone booth (which is also obsolete). Techniques for putting circuitry on silicon are reaching the point where a single gate rivals the wavelength of the light creating it. This form of technology will obviously reach a certain density limit. Presently the best silicon chips used in today's computers contain about a million individual transistors.

In contrast, a future, sugar-cube sized computer using live protein molecular gates would have a million-billion gates. Switching times would be a thousand times faster than today's fastest silicon mode is.

The way in which these new "bio" devices work gets very technical, reserved for those with chemistry degrees. However, here's the general idea...

Molecules can behave like switches. They can be arranged in a chain to form a rectifier which will allow an electron to flow in one direction, but not another. The gate is formed when this chain is placed between a molecule that donates electrons, and the one that

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Dick Kohlhaas, W5UDM

accepts electrons. This structure would be placed between two metal films, much like a capacitor. Very low voltages and refrigeration would be needed to prevent frying our synthetic brain.

With the development of these devices comes new applications. Robots with human-like "brains". Human brain implants to replace damaged "original" brains, or restore lost eyesight.

Look for these new computer chips to start appearing by 1990. In the meantime perhaps we should start finding ways to feed our computerized HT's and TRS-80's at breakfast, along with their human counterparts sporting similar brains.

de Ken NBEIH
TNX L.C.A.R.A.

ANTENNA BUILDING HINTS

- Never climb a tree you can't get down if the ladder vanishes.
- Never assume an RF path is cold unless you have checked it — with someone else's finger.
- No matter how much wire appears to be on the spool, it is always at least 10 cm short.
- ANYTHING will work as an antenna to some extent, but NOTHING works as well as it should.
- The impedance of any new antenna is always outside the range of your ATU.
- YOU can change ionospheric propagation paths — if you build a V-Beam or Rhombic for a particular path, the path will move at least 20° by the time you fire up.
- Breaking strain of a wire is easily determined — it is always 10 kg less than the minimum force required to get it up in the air.
- By reference handbooks, you can always prove that no useful antenna can be made from the materials at hand.

This is a story about four people named Everybody, Somebody, Anybody and Nobody. There was an important job to be done and Everybody was sure that Somebody would do it.

Anybody could have done it, but Nobody did it. Somebody got angry about that, because it was Everybody's job. Everybody thought that Anybody could do it, but Nobody realized that Everybody wouldn't do it. It ended up that Everybody blamed Somebody when Nobody did what Anybody could have done.

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MEETING NOTICE

The September meeting of the Pikes Peak Radio Amateur Association will be held on September 14 at 7:30 p.m. at the Palmer House Motel on N. Chestnut Street (just north of I-25 and Fillmore.) Carl Smith, Vice President of the ARRL, Lys Carey, Rocky Mountain ARRL Director, and Marshall Quiat, Assistant Director, will be on hand to answer questions from the group on a variety of subjects.

All members and other interested persons are encouraged to attend.

BUSINESS USE OF HAM RADIO IS ILLEGAL

Any business use of Amateur radio is illegal, and the Commission has issued a regulatory clarification of Parts 97.114 and 97.3 to emphasize the scope of the prohibitions. Specifically, Section 97.114, which constitutes the definition of "business," has been moved to the definitions section (97.3), and a new rule (97.110) has been added which simply says that any form of business communications are prohibited from taking place on the Amateur bands. The FCC still defines "business" as being any form of communications that facilitates the business or commercial affairs of any party. Examples of this, according to an FCC spokesman, include such items as ordering parts and/or services over an autopatch (yes — even ordering a pizza for dinner), passing payroll or other company information (such as calling your boss on an autopatch to tell him you are going to be late for work) and participation in Amateur nets where money exchanges (due to the sale or exchange of personal equipment) are of fundamental importance to operation. The only exclusion to the "pecuniary interest" prohibition appears to be volunteer news services such as W1AW (ARRL) or the Westlink Amateur Radio News (or other bulletin services) that provide informative material free of charge to the Amateur, and avoid matters which might be deemed a violation of the "business ban." The commission says it issued the clarification after receiving hundred of requests from Amateurs to take this action.

Implementation is immediate, and only operations which can be construed as falling under the definition of the term "business" are affected by the clarification.

From Westlink Reports #397

BOARD MINUTES

The Board meeting of the Pikes Peak Radio Amateur Association was called to order Aug. 15th at 7:45 p.m. in the home of Tom, AD6O. Present were Tom; Mark, N6EPF; Les, KC6NC; Charlie, KC6TI; Bud, N6DDF; and Dave, N6DV.

Due to lack of member interest in handling the Enduro, Dave will ask the Mountain Amateur Radio Club if they would coordinate it this year.

The Labor Day Balloon Race and events people have asked for help with communications. Les, KC6NC should be contacted.

Discussion was held on what prizes to offer at next years Swapfest. Feeling was that a television would make a good first prize as it would appeal to hams and non-hams. Second and third prizes are to be decided but centered around a scanner, VCR, microwave, and free dinners. Expenditures should not exceed \$700 for all three — depending on prices.

The slate of nominees for the October election is growing. The list presently includes Jim, KR7J, Mark, N6EPF; Les, KC6NC; Joe, NOENM; Bill, KQ6H; Al, N6CMW; and Rosie, WA6MNL.

Dave moved, Mark seconded, that the CCARC constitution changes (reported in club minutes) be accepted with the suggestion that one section have a third requirement that the CCARC provide an agenda before their upcoming meetings. The motion was unanimously approved.

AAQ asked to use the club generator to help with DL antenna measurements in Denver. The vote was 3—2 (1 abstention) to allow use of the generator.

There being no further business before the board, the meeting was adjourned at 9:04 p.m. Next meeting will be Sept. 19th at Charlie's, KC6TI.

Respectfully Submitted,
Mark, N6EPF

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 Azden PCS 300 HT — factory repaired \$200.
 Two Yaesu FT 227R & 227RA 2 mtr. FM mobile \$135 each.
 Yaesu FT-7 — 12V 50 watt PEP 80-10 meter mobile \$250.
 Yaesu Uniliner patch/spkr. \$50.
 Dentron Jr. Monitor 300 watt HF tuner \$55.
 Dentron GLA 1000 1200 watt PEP linear \$250.
 Swan Mk II 2 KW linear & matching P.S., excellent \$475.
 Hygain TH3 3 element tribander \$150.
 SBE 5STV, complete unit all built into one cabinet,
 including camera \$300.
 Galaxy 5 w/ AC supply and speaker \$185.
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 LS 400-12 12 volt power supply for Heath/others \$40.
 Collins 755C3 receiver w/extras 14 socket crystal deck —
 Serial #11997 — Mint \$350.
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 Yaesu FTV 100 Ext. VFO \$100.
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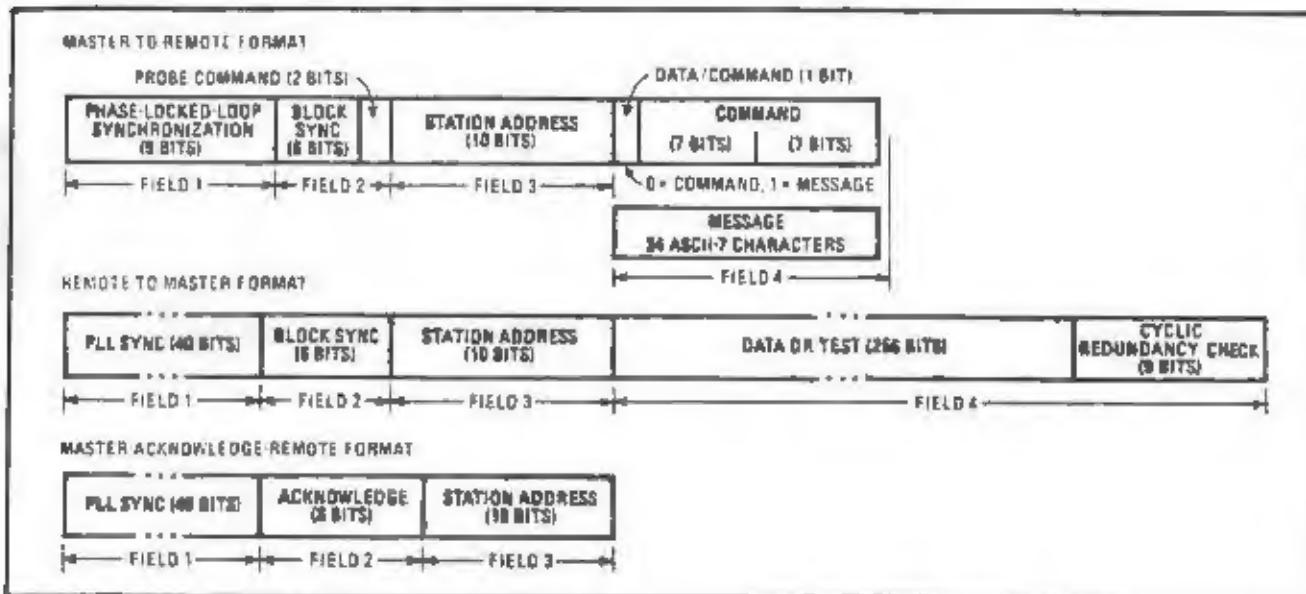
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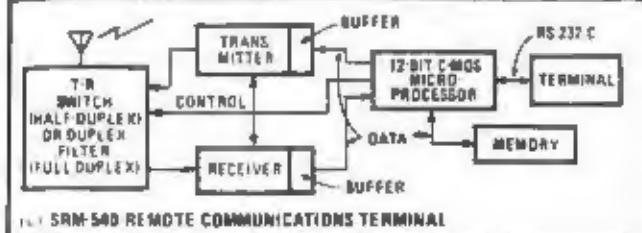
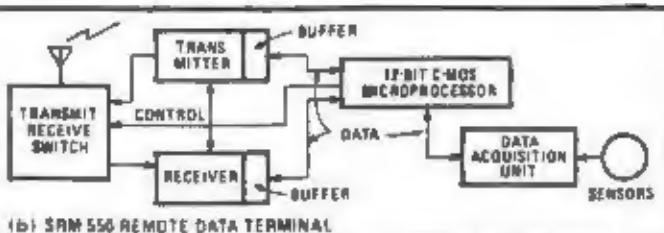
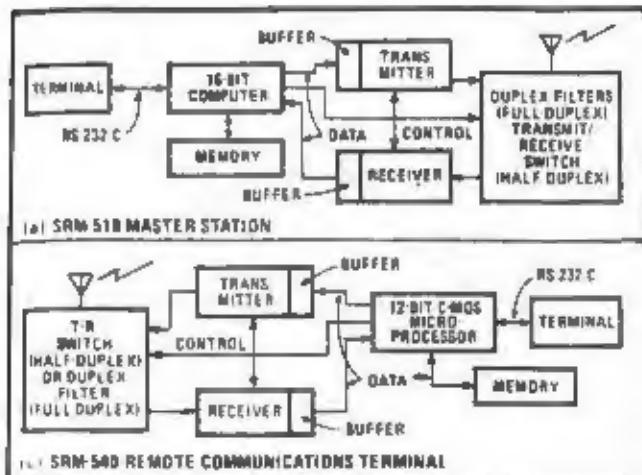
METEOR BURST DIAGRAMS MISSING FROM LAST MONTH'S ISSUE



Specialized protocols. Because meteor burst equipment is typically arranged in star networks with multiple remote stations reporting to a single master station, the use of three protocol formats helps keep the commands and the transmitted data organized.

From Electronics, Dec. 29, 1982, pp 71-79

TNX to March 83 QSP



Typical configuration. Computer advances make meteor-burst equipment practical. Setups include a minicomputer-controlled master station (a) and microcomputer-controlled remote stations for data acquisition (b), communications (c), or both.



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